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## Claims:

- A method for improving the uniformity of a wet coating on a substrate
  comprising contacting the coating at a first position with wetted surface
  portions of at least two rotating wire-wound coating rods and re-contacting the
  coating with such wetted surface portions at a different position or positions
  on the substrate.
- 2. A method according to claim 1 wherein the coating rods do not have the same period of contact with the substrate.
- 3. A method according to claim 2 wherein the rotational periods of the coating rods are not periodically related.
- 4. A method according to claim 1 comprising at least three coating rods.
- 5. A method according to claim 4 wherein the coating rods all have different periods of rotation.
- 6. A method according to claim 4 wherein the coating rods have a progression of smaller and smaller wire diameters.
  - 7. A method according to claim 1 comprising at least five coating rods.
  - 8. A method according to claim 1 comprising at least ten coating rods.
- 9. A method according to claim 1 wherein the coating rods have the same period of contact with the substrate.
  - 10. A method according to claim 9 comprising at least four coating rods.
  - 11. A method according to claim 9 comprising at least ten coating rods.
  - 12. A method according to claim 1 wherein the substrate has a direction of motion and the direction of rotation of at least one of the coating rods is the same as the direction of substrate motion.

- 13. A method according to claim 12 wherein the direction of rotation of at least two of the coating rods is the same as the direction of substrate motion.
- 14. A method according to claim 12 wherein all the coating rods rotate in the same direction as and at substantially the same speed as the substrate.
- 5 15. A method according to claim 12 wherein the substrate comprises a web and the coating rods are undriven, bear against the substrate and are rotated by the motion of the substrate.
  - 16. A method according to claim 1 wherein the substrate comprises a sheet mounted on a rotating support.
- 10 17. A method according to claim 1 further comprising changing the period of rotation of a coating rod to reduce or minimize coating defects.
  - 18. A method according to claim 1 further comprising operating a coating rod at a fixed or variable surface speed differential relative to the surface speed of the support.
- 15 19. A method according to claim 18 wherein the surface speed differential is varied sinusoidally.
  - 20. A method according to claim 1 wherein the substrate initially has a discontinuous coating.
- 21. A method according to claim 20 wherein the coating comprises a pattern of stripes.
  - 22. A method according to claim 21 further comprising selecting or changing the stripe width to produce a more uniform coating.
  - 23. A method according to claim 20 wherein the coating comprises a pattern of drops.

- 24. A method according to claim 1 wherein the coating is converted from a voided coating to a void-free continuous coating.
- 25. A method according to claim 1 wherein the coating is converted to have an average caliper less than 5 micrometers.
- 5 26. A method according to claim 1 wherein the coating comprises one or more lanes of coating on the substrate.
  - 27. A method according to claim 26 wherein the coating comprises two or more lanes containing the same or two or more differing formulations separated by a lane or lanes without coating.
- A method according to claim 26 wherein the coating comprises two or more adjacent lanes containing two or more differing formulations.
  - 29. A device comprising two or more rotating wire-wound coating rods that periodically contact and re-contact a wet coating at different positions on a substrate, wherein the periods of the devices are selected so that the uniformity of the coating is improved.
  - 30. A device according to claim 29 wherein the coating rods do not have the same period of contact with the substrate.
  - 31. A device according to claim 30 wherein the rotational periods of the coating rods are not periodically related.
- 20 32. A device according to claim 29 comprising at least three coating rods.
  - 33. A device according to claim 32 wherein the coating rods all have different periods of rotation.
  - 34. A device according to claim 32 wherein the coating rods have a progression of smaller and smaller wire diameters.
- 25 35. A device according to claim 29 comprising at least five coating rods.

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- 36. A device according to claim 29 comprising at least ten coating rods.
- 37. A device according to claim 29 wherein the coating rods have the same period of contact with the substrate.
- 38. A device according to claim 37 comprising at least four coating rods.
- 5 39. A device according to claim 37 comprising at least ten coating rods.
  - 40. A device according to claim 29 wherein the substrate has a direction of motion and the direction of rotation of at least one of the coating rods is the same as the direction of substrate motion.
  - 41. A device according to claim 40 wherein the direction of rotation of at least two of the coating rods is the same as the direction of substrate motion.
  - 42. A device according to claim 40 wherein all the coating rods rotate in the same direction as and at substantially the same speed as the substrate.
  - 43. A device according to claim 40 wherein the substrate comprises a web and the coating rods are undriven, bear against the substrate and are rotated by the motion of the substrate.
  - 44. A device according to claim 29 wherein the substrate comprises a sheet mounted on a rotating support.
  - 45. A device according to claim 29 wherein the period of rotation of a coating rod can be changed to reduce or minimize coating defects.
- 20 46. A device according to claim 29 wherein a coating rod can be operated at a fixed or variable surface speed differential relative to the surface speed of the support.
  - 47. A device according to claim 46 wherein the surface speed differential is varied sinusoidally.

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- 48. A device according to claim 29 wherein the coating rods can contact and recontact one or more lanes of coating on the substrate.
- 49. A device according to claim 48 wherein the coating rods can contact and recontact two or more lanes containing the same or two or more differing formulations separated by a lane or lanes without coating.
- 50. A device according to claim 48 wherein the coating rods can contact and recontact two or more adjacent lanes containing two or more differing formulations.
- 51. A coating apparatus comprising a coating station that applies an uneven coating to a substrate and an improvement station comprising a device according to claim 29.
- 52. A coating apparatus according to claim 51 wherein the coating station applies a discontinuous coating.
- 53. A coating apparatus according to claim 51 wherein the coating station applies a pattern of stripes.
- 54. A coating apparatus according to claim 51 wherein the stripe width can be selected or changed to produce a more uniform coating.
- 55. A coating apparatus according to claim 51 wherein the coating station applies a pattern of drops.
- 20 56. A coating apparatus according to claim 51 wherein the coating is converted from a voided coating to a void-free continuous coating.
  - 57. A coating apparatus according to claim 51 wherein the coating is converted to have an average caliper less than 5 micrometers.

58. A coating apparatus comprising a coating station for applying an uneven coating to a first substrate, an improvement station comprising a device according to claim 29, and a transfer station for transferring the coating from the first substrate to a second substrate.